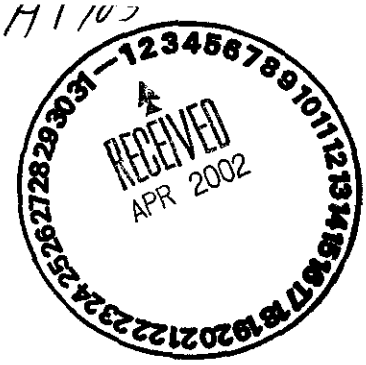
0057407 H1705



Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-093 H1705

DATE RECEIVED: 02/27/02 LVL LOT # :0202L077

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B143Y8	001	M1	SO	02LVJ015	02/25/02	N/A	03/07/02
B143Y8	001 MS	M1	SO	02LVJ015	02/25/02	N/A	03/07/02
B143Y8	001 MSD	M1	SO	02LVJ015	02/25/02	N/A	03/07/02
B143Y9	002	M1	SO	02LVJ015	02/25/02	N/A	03/07/02
B14400	003	M1	SO	02LVJ015	02/25/02	N/A	03/07/02
B14401	004	M1	SO	02LVJ015	02/25/02	N/A	03/07/02
B14403	005	M1	SO	02LVJ017	02/25/02	N/A	03/08/02
B14403	005	N1	SO	02LVJ017	02/25/02	N/A	03/08/02
B14404	006	M1	SO	02LVJ017	02/25/02	N/A	03/08/02
B14404	006	N1	SO	02LVJ017	02/25/02	N/A	03/08/02
B14405	007	M1	SO	02LVJ015	02/25/02	N/A	03/07/02
LAB QC:						
VBLKNF	MB1		S	02LVJ015	N/A	N/A	03/07/02
VBLKNF	MB1 BS		S	02LVJ015	N/A	N/A	03/07/02
VBLKNG	MB1		S	02LVJ017	N/A	N/A	03/08/02

gw 03-20-02

EDMC

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B99-093
LVL #: 0202L077
SDG/SAF #: H1705/B99-093

W.O. #: 11343-606-001-9999-00
Date Received: 02-27-02

GC/MS VOLATILE

The set of samples consisted of seven (7) solid samples collected on 02-25-02.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260A for client specified Volatile target compound Carbon Tetrachloride on 03-07,08-02.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.

2. The required holding time for analysis was met.

3. The samples required a medium level analysis because they contained high levels of target compound.

4. Six (6) of forty-two (42) surrogate recoveries were outside EPA QC limits. Samples B14403 and B14404 were re-analyzed and reported. There was no impact on the target compound.

5. All matrix spike recoveries were within EPA QC limits.

6. All blank spike recoveries were within EPA QC limits.

7. Internal standard areas were outside QC limits for Samples B14403 and B14404. The samples were re-analyzed and reported. There was no impact on the data.

8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

3/21/02
Date

J. Michael Taylor
President
Lionville Laboratory Incorporated

pcf\group\data\voa\tnu-hanford\0202-077.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

GLOSSARY OF VOA DATA

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

GLOSSARY OF VOA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).

Y = Additional qualifiers used as required are explained in the case narrative.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

MP - Missed Peak: manually added peak not found by automatic quan program.

PA - Peak Assignment: quan report was changed to reflect correct peak assignment.

RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.

SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.

CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.

PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.
Volatiles By GC/MS, Special List Report Date: 03/19/02 16:22
RFW Batch Number: 0202L077 Client: TNUHANFORD B99-093 H1705 Work Order: 11343606001 Page: 1a

	Cust ID:	B143Y8	B143Y8	B143Y8	B143Y9	B14400	B14401
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	100	100	100	95.2	105	111
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
	Level:	MED	MED	MED	MED	MED	MED
Surrogate Recovery	1,2-Dichloroethane-d4	106 %	111 %	114 %	108 %	109 %	112 %
	Toluene-d8	92 %	86 %	88 %	88 %	87 %	82 %
	Bromofluorobenzene	86 %	83 %	83 %	83 %	81 %	74 %
Carbon Tetrachloride		580000	121 %	101 %	710000	1500000	440000

	Cust ID:	B14403	B14403	B14404	B14404	B14405	VBLKNF
Sample Information	RFW#:	005	005	006	006	007	02LVJ015-MB1
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOIL
	D.F.:	2.16	2.16	2.11	2.11	205	2.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
	Level:	MED	MED REP	MED	MED REP	MED	MED
Surrogate Recovery	1,2-Dichloroethane-d4	145 %	131 %	148 %	114 %	109 %	104 %
	Toluene-d8	152 * %	126 %	155 * %	103 %	87 %	91 %
	Bromofluorobenzene	21 * %	27 * %	15 * %	41 * %	82 %	87 %
Carbon Tetrachloride		460 J	420 J	840	830	3000000	620 U

*= Outside of EPA CLP QC limits.

	Cust ID:	VBLKNF BS		VBLKNG		
Sample Information	RFW#:	02LVJ015-MB1		02LVJ017-MB1		
	Matrix:	SOIL		SOIL		
	D.F.:	2.00		2.00		
	Units:	UG/KG		UG/KG		
	Level:	MED		MED		
Surrogate Recovery	1,2-Dichloroethane-d4	98	%	106	%	
	Toluene-d8	90	%	89	%	
	Bromofluorobenzene	85	%	86	%	
Carbon Tetrachloride		94	%	620	U	

*= Outside of EPA CLP QC limits.

Lionville Laboratory Use Only

02021077

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford B99-093

Est. Final Proj. Sampling Date:

Project #: 11343-606-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: OJ

QC: SPEC Del: STD TAT: 30 days

Date Rec'd: 2-27-02 Date Due: 3-29-02

Refrigerator #		1
#/Type Container	Liquid	
	Solid	1AG
Volume	Liquid	
	Solid	250
Preservatives		1

ANALYSES REQUESTED: ORGANIC (VOA, BNA, Pest/PCB, Herb); INORG (Metal, CN)

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only: 0624 X 2% MST
001	B143Y8			SO	2/25/02	1135	X
002	B143Y9					1143	X
003	B14400					1158	X
004	B14401					1205	X
005	B14403					1214	X
006	B14404					1226	X
007	B14405					1230	X

Special Instructions: SAF # B99-093
Run Matrix QC

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were: 1) Shipped Y or Hand Delivered ___ Airbill # 7903 2241 8117
2) Ambient or (Chilled)
3) Received in Good Condition (Y) or N
4) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was: 1) Present on Outer Package (Y) or N; 2) Unbroken on Outer Package (Y) or N; 3) Present on Sample (Y) or N; 4) Unbroken on Sample (Y) or N

COC Record Present Upon Sample Rec't (Y) or N

Cooler Temp. 2.6 °C

Relinquished by	Received by	Date	Time
FedEx	[signature]	2/27/02	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES:

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-093-41	Page 1 of 2
Collector: Renee Nielson	Company Contact: Virginia Rohay; Telephone No.: 372-9100	Project Coordinator: TRENT, SJ	Price Code: 9N; Data Turnaround: 45 Days
Project Designation: 200-ZP-2 Passive Soil Vapor Extraction - Other Solid	Sampling Location: 200 West	SAF No.: B99-093	Air Quality ☐
Ice Chest No.: ERC-01-063	Field Logbook No.: EL-1562-1; COA: R20ZP2DP60	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: A020194	Bill of Lading/Air Bill No.: 423587955-8117	

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 2.26.02

Special Handling and/or Storage
Cool 4C

Preservation	Cool 4C
Type of Container	aG
No. of Container(s)	1
Volume	250mL
SAMPLE ANALYSIS	VOA - 8260A (TCL) (Carbon tetrachloride); Moisture Content - D2216

Sample No.	Matrix *	Sample Date	Sample Time	VOA - 8260A; Moisture Content - D2216
B143Y8	OTHER SOLID	2-25-02	1135	X
B143Y9	OTHER SOLID	2-25-02	1143	X
B14400	OTHER SOLID	2-25-02	1158	X
B14401	OTHER SOLID	2-25-02	1205	X
~~B14402~~	~~OTHER SOLID~~			2/25/02 RJN

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Renee Nielson	2/25/02 1434	Ref#1A	2/25/02 1434
Ref 1A 3728	2.26.02 0800	RT / R Thoren	2.26.02 0800
RT / R Thoren ERC	2.26.02 0800	FED EX	
FedEx	2.27.02 0945	[illegible signature]	2.27.02 0945

SPECIAL INSTRUCTIONS
** Laboratory may use medium level preparation for VOA. They are to report any other halogenated compounds found.
** Laboratory must include the % Moisture data as part of all hard copy reports.

Samples stored in Ref.#1A at the 3728 Shipping Facility on 2/25/02. Collector not available to relinquish samples on 2/26/02 for shipment.
RT 2.26.02

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (12/31/2001)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-093-41	Page 2 of 2
Collector: Renee Nielson	Company Contact: Virginia Rohay; Telephone No.: 372-9100	Project Coordinator: TRENT, SJ	Price Code: 9N; Data Turnaround: 45 Days
Project Designation: 200-ZP-2 Passive Soil Vapor Extraction - Other Solid	Sampling Location: 200 West	SAF No.: B99-093	Air Quality: ☐
Ice Chest No.: ERC-01-0603	Field Logbook No.: EL-1562-1; COA: R20ZP2DP60	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: A020194	Bill of Lading/Air Bill No.: 423574965-8117	

POSSIBLE SAMPLE HAZARDS/REMARKS: Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 2.26.02

Special Handling and/or Storage: Cool 4C

Preservation	Cool 4C											
Type of Container	aG											
No. of Container(s)	1											
Volume	250mL											
SAMPLE ANALYSIS	VOA - 8260A (TCL) (Carbon tetrachloride); Moisture Content - D2216											
Sample No.	Matrix *	Sample Date	Sample Time									
B14403	OTHER SOLID	2-25-02	1214	X								
B14404	OTHER SOLID	2-25-02	1220	X								
B14405	OTHER SOLID	2-25-02	1230	X								

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K Nielson/R Nielson 2/25/02	1434	Ref # 1A 2/25/02	1434
Ref 1A 3728 2.26.02	0800	R. Thorn	2.26.02 0800
R. Thorn ERC 2.26.02	0800	FED EX	
FED EX	2.27.02 0945		2.27.02 0945

SPECIAL INSTRUCTIONS

** Laboratory may use medium level preparation for VOA. They are to report any other halogenated compounds found.

** Laboratory must include the % Moisture data as part of all hard copy reports.

Samples stored in Ref.# 1A at the 3728 Shipping Facility on 2.26.02. Collector not available to relinquish samples on 2.26.02 for shipment.

RT 2.26.02

Matrix *

S=Soil; SE=Sediment; SO=Solid; SI=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (12/31/2001)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TMU Hanford

Purchase Order/Project:

DATE: 2-27-02

SAF# / SOW# / Release #: B99-093

Laboratory SDG #: 0202L077

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

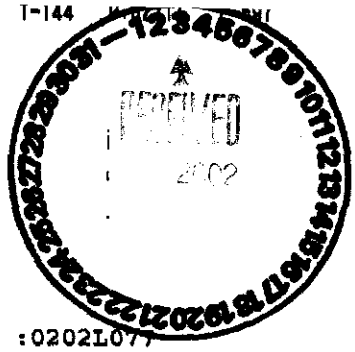
1.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3.	Airbill # recorded?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
5.	Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
7.	All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8.	All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☑ No	☐ N/A	☐ see Comment #
10.	Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
11.	Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12.	coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13.	coc faxed or emailed to client?	☐ Yes	☐ No	☐ N/A	☐ see Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☐ N/A	☐ see Comment #

Cooler # / temp and Comments:

#ERC-01-0631 2.6°C

Laboratory Sample Custodian: D. Smith

Laboratory Project Manager:



Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-093 H1705

DATE RECEIVED: 02/27/02 LVL LOT # :0202L077

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B143Y8						
% MOISTURE	001	SO	02L%S024	02/25/02	03/13/02	03/14/02
% MOISTURE	001 REP	SO	02L%S024	02/25/02	03/13/02	03/14/02
% SOLIDS	001	SO	02L%S024	02/25/02	03/13/02	03/14/02
% SOLIDS	001 REP	SO	02L%S024	02/25/02	03/13/02	03/14/02
B143Y9						
% MOISTURE	002	SO	02L%S024	02/25/02	03/13/02	03/14/02
% SOLIDS	002	SO	02L%S024	02/25/02	03/13/02	03/14/02
B14400						
% MOISTURE	003	SO	02L%S024	02/25/02	03/13/02	03/14/02
% SOLIDS	003	SO	02L%S024	02/25/02	03/13/02	03/14/02
B14401						
% MOISTURE	004	SO	02L%S024	02/25/02	03/13/02	03/14/02
% SOLIDS	004	SO	02L%S024	02/25/02	03/13/02	03/14/02
B14403						
% MOISTURE	005	SO	02L%S024	02/25/02	03/13/02	03/14/02
% SOLIDS	005	SO	02L%S024	02/25/02	03/13/02	03/14/02
B14404						
% MOISTURE	006	SO	02L%S024	02/25/02	03/13/02	03/14/02
% SOLIDS	006	SO	02L%S024	02/25/02	03/13/02	03/14/02
B14405						
% MOISTURE	007	SO	02L%S024	02/25/02	03/13/02	03/14/02
% SOLIDS	007	SO	02L%S024	02/25/02	03/13/02	03/14/02

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B99-093 H1705
LVL#: 0202L077

W.O.#: 11343-606-001-9999-00
Date Received: 02-27-02

INORGANIC NARRATIVE

1. This narrative covers the analyses of 7 solid samples.

2. The samples were prepared and analyzed in accordance with the method checked on the attached glossary.

3. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.

4. Sample holding times as required by the method and/or contract were met.

5. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit.

6. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

03-15-02
Date

njp\i02-077

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

Lionville Laboratory Incorporated

WET CHEMISTRY
METHODS GLOSSARY FOR SOIL/SOLIDS* SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	__ D2216-80		__ ILMO4.0 (e)
% Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Chromium VI		__ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		__ 1110(mod) __ 9045C	
Cyanide, Total		__ 9010B	__ ILMO4.0 (e)
Cyanide, Reactive		__ Section 7.3/9014	
Halides, Extractable Organic		__ 9020B	__ EPA 600/4/84-008
Halides, Total		✓ 9020B	✓ EPA 600/4/84-008
EP Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		✓ 1010 (mod.)	
Oil & Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87(mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		__ 9071	__ EPA 418.1
pH, Soil		__ 9045C	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		__ 9030B(mod)	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	
Other:	**Method:**		
Other:	**Method**		

* Liquid samples

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).

b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/14/02

CLIENT: TNUHANFORD B99-093 M1705 LVL LOT #: 0202L077
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B143Y8	% Moisture	22.1	%	0.01	1.0
		% Solids	77.9	%	0.01	1.0
-002	B143Y9	% Moisture	33.5	%	0.01	1.0
		% Solids	66.5	%	0.01	1.0
-003	B14400	% Moisture	39.7	%	0.01	1.0
		% Solids	60.3	%	0.01	1.0
-004	B14401	% Moisture	19.8	%	0.01	1.0
		% Solids	80.2	%	0.01	1.0
-005	B14403	% Moisture	5.4	%	0.01	1.0
		% Solids	94.6	%	0.01	1.0
-006	B14404	% Moisture	7.7	%	0.01	1.0
		% Solids	92.3	%	0.01	1.0
-007	B14405	% Moisture	41.0	%	0.01	1.0
		% Solids	59.0	%	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/14/02

CLIENT: TNOHANFORD B99-093 H1705 LVL LOT #: 0202L077

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-001REP	B143Y8	% Moisture	22.1	22.1	0.048	1.0
		% Solids	77.9	77.9	0.012	1.0

Lionville Laboratory Use Only
02021077

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford B99-093
Est. Final Proj. Sampling Date:
Project #: 11343-006-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: OS
QC: SPEC Del: STD TAT: 30 days
Date Rec'd: 2.27.02 Date Due: 3-29-02

Refrigerator #: 1
#/Type Container: Liquid: / Solid: 1A6
Volume: Liquid: / Solid: 250
Preservatives: —
ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA (0624X 1% MST)
001	B143Y8			SO	2/26/02	1135	X
002	B143Y9					1143	X
003	B14400					1158	X
004	B14401					1206	X
005	B14403					1214	X
006	B14404					1226	X
007	B14405					1230	X

Lionville Laboratory Use Only

Special Instructions: SAF # B99-093
Run Matrix QC

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
FedEx	[signature]	2/27/02	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or (N)
NOTES:

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # 7903 2241 8117
2) Ambient or (Chilled)
3) Received in Good Condition (Y) or N
4) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was:
1) Present on Outer Package (Y) or N
2) Unbroken on Outer Package (Y) or N
3) Present on Sample (Y) or N
4) Unbroken on Sample (Y) or N
COC Record Present Upon Sample Rec't (Y) or N
Cooler Temp. 2.6 °C

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-093-41	Page 1 of 2
Collector: Renee Nielson	Company Contact: Virginia Roby	Telephone No.: 372-9100	Project Coordinator: TRENT, SJ	Price Code 9N
Project Designation: 200-ZP-2 Passive Soil Vapor Extraction - Other Solid	Sampling Location: 200 West		SAF No.: B99-093	Air Quality ☐ / Data Turnaround: 45 Days
Ice Chest No.: ERC-01-0163	Field Logbook No.: EL-1562-1	COA: R20ZP2DP60	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: A020194		Bill of Lading/Air Bill No.: 42357955-8117	

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 2.26.02

Special handling and/or storage

Cool 4C

SAMPLE ANALYSIS				VOA - 8260A (TCL) {Carbon tetrachloride}; Moisture Content - D2216									
Preservation				Cool 4C									
Type of Container				aG									
No. of Container(s)				1									
Volume				250mL									
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**	[redacted]									
B143Y8	OTHER SOLID	2-25-02	1135	X									
B143Y9	OTHER SOLID	2-25-02	1143	X									
B14400	OTHER SOLID	2-25-02	1158	X									
B14401	OTHER SOLID	2-25-02	1205	X									
~~B14402~~	~~OTHER SOLID~~			2/25/02 RN									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature] R Nielson	2/25/02 1434	R [signature] 1A	2/25/02 1434
R [signature] 1A 3728	2.26.02 0800	R [signature] RThoren	2.26.02 0800
R [signature] RThoren ERC	2.26.02 0800	FED Ex	
FedEx	2.27.02 0945	D [signature]	2.27.02 0945

SPECIAL INSTRUCTIONS

** Laboratory may use medium level preparation for VOA. They are to report any other halogenated compounds found.

** Laboratory must include the % Moisture data as part of all hard copy reports.

Samples stored in Ref.# 1A at the 3728 Shipping Facility on 2/25/02. Collector not available to relinquish samples on 2/26/02 for shipment.

RT 2.26.02

Matrix *: S=Soil, SE=Sediment, SO=Solid, SL=Sludge, W=Water, O=Oil, A=Air, DS=Drum Solids, DL=Drum Liquids, T=Tissue, WI=Wipe, L=Liquid, V=Vegetation, X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (12/31/2001)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-093-41	Page 1 of 1
Collector Renee Nielson	Company Contact Virginia Rohay	Telephone No. 372-9100	Project Coordinator TRENT, SJ	Price Code 9N Air Quality ☐	Data Turnaround 45 Days
Project Designation 200-ZP-2 Passive Soil Vapor Extraction - Other Solid	Sampling Location 200 West		SAF No. B99-093		
Ice Chest No. ERC-01-0603	Field Logbook No. EL-1562-1	COA B20ZP2DP60	Method of Shipment Federal Express		
Shipped To TMA/RECRA	Offsite Property No. ADZ0194		Bill of Lading/Air Bill No. 4235-7965-8117		

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples did not originate in radiological controlled area. No total activity associated with sample/samples.
Special Handling and/or Storage
Cool 4C

RT 2.26.02

Preservation	Cool 4C												
Type of Container	aG												
No. of Container(s)	1												
Volume	250mL												
SAMPLE ANALYSIS	VOA - 8260A (EDL) [Carbon tetrachloride]; Moisture Content - SW846												
Sample No.	Matrix *	Sample Date	Sample Time										
B14403	OTHER SOLID	2-25-02	1214	X									
B14404	OTHER SOLID	2-25-02	1220	X									
B14405	OTHER SOLID	2-25-02	1230	X									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R Nielson	2/25/02 1434	Ref # 1A	2/25/02 1434
Ref 1A 3728	2.26.02 0800	R T Thorp	2.26.02 0800
R T Thorp ERC	2.26.02 0800	FEDEX	
FEDEX	2.27.02 0845		2.27.02 0845

SPECIAL INSTRUCTIONS
** Laboratory may use medium level preparation for VOA. They are to report any other halogenated compounds found.
** Laboratory must include the % Moisture data as part of all hard copy reports.

Samples stored in Ref.# 1A at the 3728 Shipping Facility on 2.26.02
Collector not available to relinquish samples on 2.26.02 for shipment.

RT 2.26.02

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
BS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (12/31/2001)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TMU Hanford

Purchase Order/Project:

DATE: 2-27-02

SAF# / SOW# / Release #: B99-093

Laboratory SDG #: 0202L077

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☑ No	☐ N/A	☐ see Comment #
10. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12. coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc faxed or emailed to client?	☐ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☐ N/A	☐ see Comment #

Cooler # / temp and Comments:

ERC-01-063 / 2.6°C

Laboratory Sample Custodian: D. Smith

Laboratory Project Manager: